

(PCT Article 36 and Rule 70)

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/019530

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following _____, which is the language of a translation furnished for the purposes of:
- ☐ international search (Rule 12.3 and 23.1(b))
- ☐ publication of the international application (Rule 12.4)
- ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1-10 _____ as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☒ the claims:
- nos. 4-9, 11 _____ as originally filed/furnished
- nos.* _____ as amended (together with any statement) under Article 19
- nos.* 1, 3, 10, 12 _____ received by this Authority on 26.10.2005
- nos.* _____ received by this Authority on _____
- ☒ the drawings:
- sheets Fig. 1-3 _____ as originally filed/furnished
- sheets* _____ received by this Authority on _____
- sheets* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☒ The amendments have resulted in the cancellation of:
- ☐ the description, pages _____
- ☒ the claims, nos. 2 _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

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Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
1. Statement			
Novelty (N)	Claims	<u>1, 3-12</u>	YES
	Claims	<u></u>	NO
Inventive step (IS)	Claims	<u></u>	YES
	Claims	<u>1, 3-12</u>	NO
Industrial applicability (IA)	Claims	<u>1, 3-12</u>	YES
	Claims	<u></u>	NO
2. Citations and explanations (Rule 70.7)			
Document 1: JP 2002-88492 A (Toby Industry Co., Ltd.), 27 March 2002			
Document 2: JP 2003-311210 A (Bridgestone Corporation), 5 November 2003			
Document 3: JP 2003-290706 A (Bridgestone Corporation), 14 October 2003			
Document 4: WO 00/45994 A (Bridgestone Corporation), 10 August 2000			
Document 5: JP 2001-277116 A (Nippon Sanso Corporation), 9 October 2001			
Document 6: JP 7-24735 A (Nippon Steel Corporation, Kawasaki Heavy Industries, Ltd.), 27 January 1995			
Document 7: JP 4-141371 A (Sony Corporation), 14 May 1992			
<p>Document 1 cited in the international search report sets forth a method and device for surface treatment of aluminum wheels, containing a blasting step whereby a blasting material is blown against the surface of an aluminum wheel, wherein the method is applied to aluminum wheels having a releasing agent applied to the surface thereof, and after the blasting step a cleaning and a chemical treatment step that does not contain hexavalent</p>			

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chromium are carried out.

Document 2 cited in the international search report sets forth a technical feature relating to a method for the surface treatment of aluminum wheels using an air-type blasting device and using a plastic blasting material having a particle size which falls within the range of 100 to 2000 μ m and having as its main ingredient a thermoplastic resin, and containing a metal blasting material.

Document 3 cited in the international search report sets forth a technical feature relating to a method of surface treatment wherein a surface is coated using as a blasting material a plastic blasting material having thermoplastic resin as its main ingredient, and said method contains a solvent treatment step.

Document 4 cited in the international search report sets forth a technical feature relating to a plastic blasting material using a pulverized powder of a thermoplastic resin molding, which is an irregular polyhedron with each particle having effectively sharp edge lines, and the particle size is made approximately uniform at each classification.

Document 5 cited in the international search report sets forth a technical feature relating to a method of surface treatment, wherein as the blowing nozzle for the blasting material, a nozzle is used which forms a taper shape with the inner diameter becoming wider at a widening angle of 1.5° with respect to the longitudinal direction of the nozzle, from the end of the inner throat part towards the outlet tip.

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Document 6 cited in the international search report sets forth a technical feature relating to a method of surface treatment, wherein as the blowing nozzle for the blasting material, a nozzle is used which has a ratio of length from the end of the throat portion to the aforementioned tip (B) to the diameter of the throat part (A) of (B/A) of 10 or more.

Document 7 cited in the international search report sets forth a technical feature relating to a surface treatment device, wherein a surface treatment device for carrying out blasting by blowing a blasting material against the surface of the object to be treated is provided with a rotating shaft which fixes the object to be treated in a rotating manner, a rotating mechanism which is provided with a rotating shaft and a nozzle positioned a distance away from the direction of rotation and which controls the rotation of the rotating shaft, and a movement mechanism which moves the nozzle in a reciprocating manner in the radial direction of the item to be treated, wherein either or both the rotating mechanism and the movement mechanism are formed as to be speed-adjustable.

Claims 1 and 3

The invention set forth in claims 1 and 3 does not involve an inventive step in the light of documents 1 and 2.

It would be easy for a person skilled in the art to conceive of applying the aforementioned technical feature set forth in document 2 to the front surface treatment method set forth in document 1.

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Claims 4 to 9

The invention set forth in claims 4 to 9 does not involve an inventive step in the light of documents 1, 2 and 3.

In addition to the matter outlined above, it would be easy for a person skilled in the art to conceive of applying the aforementioned technical feature set forth in document 3 to the surface treatment method set forth in document 1. Moreover, in blast treatment it is merely common practice to carry out blasting a plurality of times while varying the particle diameter and/or hardness of the blasting material, and to recover and recycle blasting material which has been blown out from the nozzle.

Claim 10

The invention set forth in claim 10 does not involve an inventive step in the light of documents 1, 2, 3 and 4.

In addition to the matters outlined above, it would be easy for a person skilled in the art to apply the technical feature set forth in document 4 to the surface treatment method set forth in document 1.

Claim 11

The invention set forth in claim 11 does not involve an inventive step in the light of documents 1, 2, 3, 4, 5 and 6.

In addition to the matters described above, it would be easy for a person skilled in the art to apply the technical features set forth in documents 5 and 6 to the surface treatment method set forth in document 1.

Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statementClaim 12

The invention set forth in claim 12 does not involve an inventive step in the light of documents 1 and 7.

It would be easy for a person skilled in the art to apply the aforementioned technical feature set forth in document 7 to the surface treatment device set forth in document 1. In the field of blasting, in order to recycle and repeatedly use blasting material which has been blown against the object to be treated, it is a commonly used technical feature to provide a surface treatment device with a blast booth main body having a recovery opening which recovers used blasting material in the inside bottom part of the device, and a cleaning mechanism which is positioned inside the blast booth main body.